



RESOLUTION

REQUESTING THE CITY ADMINISTRATION TO CONSIDER USING CARBON DIOXIDE MINERALIZATION CONCRETE FOR ALL FUTURE CITY INFRASTRUCTURE PROJECTS UTILIZING CONCRETE.

WHEREAS, there is a growing awareness that climate change, whether caused by human activity, natural climatic cycles, or a combination of both, is occurring and that action is necessary to increase resilience in our community to climate change impacts; and

WHEREAS, the Intergovernmental Panel on Climate Change, an intergovernmental body of the United Nations that is dedicated to providing the world with an objective, scientific view of climate change, reported in 2013 that the last 30 years were the warmest since 1850 and likely the warmest in the past 1,400 years; that carbon dioxide, methane, and nitrous oxide levels are at their highest levels in 800,000 years; and that global mean sea level rose 0.62 feet from 1901 to 2010; and

WHEREAS, the State of Hawaii has set a requirement to reduce greenhouse gas emissions in the State to 1990 levels by 2020; and

WHEREAS, the State of Hawaii is committed to a 100 percent renewable energy portfolio standard by 2045, which makes Hawaii the first state in the nation to set such a goal; and

WHEREAS, Act 15, Session Laws of Hawaii (SLH) 2018, addressed the effects of climate change by calling for the State's mitigation of its greenhouse gas emissions through the sequestration of more atmospheric carbon and greenhouse gases than the State produces as quickly as practicable, but no later than 2045; and

WHEREAS, Act 15, SLH 2018, also created a permanent Greenhouse Gas Sequestration Task Force within the State Office of Planning to establish a baseline for greenhouse gas emissions within Hawaii and short- and long-term benchmarks for increasing greenhouse gas sequestration in the State's agricultural and natural environment; and

WHEREAS, in 2016, Honolulu voters approved a charter amendment establishing the Office of Climate Change, Sustainability and Resiliency within the City and County of Honolulu to address the planning, development, and implementation of effective policies, plans, and actions for mitigating potential climate change-related impacts to the City and creating sustainable and resilient communities; and



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WHEREAS, concrete is the most widely used construction material in the world because of its low cost, strength, and durability, among other factors, and is a major component of many types of civil construction projects, such as buildings, wastewater treatment facilities, reservoirs, and transportation infrastructure; and

WHEREAS, however, cement, the critical ingredient that gives concrete its strength, is responsible for up to seven percent of the world's carbon dioxide (CO₂) emissions, largely through a chemical process called calcination, as well as through the use of energy derived from the combustion of fossil fuels; and

WHEREAS, carbon dioxide mineralization in concrete is supply concrete that has undergone active carbonation treatment during mixing such that carbon dioxide is injected during mixing and is mineralized within the concrete; and

WHEREAS, carbon dioxide mineralization reacts with calcium ions from cement to form a nano-sized calcium carbonate mineral that becomes permanently embedded in the concrete; and

WHEREAS, utilization of carbon dioxide in concrete results in carbon dioxide that is chemically transformed into a mineral form, which means it will not be released into the atmosphere as a greenhouse gas; now, therefore,

BE IT RESOLVED by the Council of the City and County of Honolulu that the City Administration is requested to consider post-industrial carbon dioxide mineralized concrete for use in all City and County of Honolulu capital improvement projects utilizing concrete where the utilization of carbon dioxide mineralized concrete does not significantly increase the costs of or significantly delay the project; and

BE IT FURTHER RESOLVED that the Department of Budget and Fiscal Services is requested to consider developing an incentive system to encourage the use of carbon dioxide mineralized concrete in all City and City-contracted capital improvement projects that require concrete; and



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

No. **18-283**

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BE IT FINALLY RESOLVED that copies of this resolution be transmitted to the Mayor, the Managing Director, the Director of Design and Construction, and the Director of Budget and Fiscal Services.

INTRODUCED BY:

[Signature]

DATE OF INTRODUCTION:

DEC 03 2018

Honolulu, Hawaii

Councilmembers

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII
CERTIFICATE
STATUS

RESOLUTION 18-283

Introduced: 12/03/18 By: JOEY MANAHAN Committee: PUBLIC
INFRASTRUCTURE,
TECHNOLOGY AND
SUSTAINABILITY

Title: RESOLUTION REQUESTING THE CITY ADMINISTRATION TO CONSIDER USING CARBON DIOXIDE MINERALIZATION
CONCRETE FOR ALL FUTURE CITY INFRASTRUCTURE PROJECTS UTILIZING CONCRETE.

Voting Legend: * = Aye w/Reservations

CC-9(19) KOBAYASHI - RE-REFERRAL OF BILLS, RESOLUTIONS AND
COMMUNICATIONS.

03/25/19 PUBLIC
INFRASTRUCTURE,
TECHNOLOGY AND
SUSTAINABILITY CR-82(19) - RESOLUTION REPORTED OUT OF COMMITTEE FOR ADOPTION.

04/17/19 COUNCIL CR-82(19) AND RESOLUTION 18-283 WERE ADOPTED.
9 AYES: ANDERSON, ELEFANTE, FORMBY, FUKUNAGA, KOBAYASHI, MANAHAN,
MENOR, PINE, TSUNEYOSHI.

I hereby certify that the above is a true record of action by the Council of the City and County of Honolulu on this RESOLUTION.


GLEN I. TAKAHASHI, CITY CLERK


ANN H. KOBAYASHI, INTERIM CHAIR AND PRESIDING OFFICER